Amendments to the Claims

The listing of claims will replace all prior versions, and listings of claims in the application.

1. (previously presented) A computer implemented data consistency maintenance method comprising the steps of:

attempting to acquire a genlock on a mirror page during a write access request operation;

locking said genlock on said mirror page;

updating data on said mirror page;

syncing said mirror page to backing store;

acquiring a genlock on a primary page associated with said mirror page;

locking said genlock on said primary page;

performing an update of data on said primary page;

syncing said primary page to backing store;

preventing read operations and write operations of other processes from accessing said mirror page and said primary page while locked;

unlocking said genlock; and

re-syncing said mirror page and said primary page.

2. (original) A data consistency maintenance method of Claim 1 further comprising the steps of keeping data included in said mirror page and data included in said associated primary page in lockstep except during a write operation.

3. (original) A data consistency maintenance method of Claim 1 further comprising the step of granting an attempt to acquire a genlock if said genlock is unlocked.

4. (previously presented) A data consistency maintenance method of Claim 1 further comprising the steps of:

retrieving a mirror page from a database; and

mapping said mirror page into a local memory if not already stored in said local memory.

5. (previously presented) A data constancy maintenance method of Claim 1 further comprising the steps of:

utilizing the lowest order bit of a write counter value to function as a genlock; and

incrementing said write counter value each time a write access is performed.

6. (original) A data constancy maintenance method of Claim 1 wherein locking said genlock on said mirror page and said genlock on said primary page provides an indication that said mirror page and said primary page are being accessed by a process performing a write operation.

7. (previously presented) A computer implemented consistency recovery method for recovering consistency after a process crash, comprising the steps of:

establishing a write counter value for a primary page and a write counter value for an associated mirror page, wherein a write counter value represents whether changes have occurred to a page;

comparing said write counter value of said primary page to said write counter value of said associated mirror page;

determining whether said primary page or said associated mirror page includes valid data;

copying a consistent page to an inconsistent page; and

resolving genlock status.

8. (original) A computer implemented consistency recovery method of Claim 7 further comprising the step of allowing a write to either complete or roll back if a process or system crash occurs while write operations are performed.

9. (original) A computer implemented consistency recovery method of Claim 7 wherein both said primary page and said associated mirror page are consistent if said write counter value of said primary page is equal to said write counter value of said associated mirror page and said primary page and said associated mirror page are both unlocked.

10. (previously presented) A computer implemented consistency recovery method of Claim 7 wherein said primary page is consistent if said write counter value of

said primary page is less than a write counter value of said associated mirror page and said primary page is unlocked and said associated mirror page is locked.

11. (previously presented) A computer implemented consistency recovery method of Claim 7 wherein said associated mirror page is consistent if said write counter value of said primary page is equal to said write counter value of said associated mirror page and said primary page and said associated mirror page are locked.

12. (previously presented) A computer implemented consistency recovery method of Claim 7 wherein said associated mirror page is consistent if said write counter value of said primary page is equal to write counter value of said associated mirror page and said primary page is unlocked and said associated mirror page is locked.

13. (original) A computer implemented consistency recovery method of Claim 7 wherein said primary page and said associated mirror page are considered to be in an invalid state if said primary page is locked and said associated mirror page is unlocked.

14. (original) A computer implemented consistency recovery method of Claim 13 wherein data included in said associated mirror page is considered the valid information.

15. (previously presented) A data consistency maintenance and recovery computer system comprising:

a bus for providing a communication path between components of the computer system;

a central processing unit (CPU) coupled to said bus, said CPU including a first process and a second process that perform a write operation and a read operation;

a database coupled to said bus, said database stores data on a computer readable medium, said data arranged on a primary page and maintained in an associate mirror page that is a copy comprising said data included in said primary page except when one of said first process and said second process perform a write operation, wherein said associated mirror page is written to before said primary page during said write operation, wherein said primary page includes a first write counter value and said mirror page includes a second write counter value, wherein a write counter value represents whether changes have occurred to a page; and

a locking system that creates and manages a lock associated with the primary page and the associated mirror page to determine whether a write operation or a read operation should be permitted to occur.

16. (cancelled)

17. (previously presented) The data consistency maintenance and recovery computer system of claim 15 wherein said locking system compares a status of said lock on said primary page to a status of said lock of associated said mirror page and compares

said first write counter value of said primary page to said second write counter value of said mirror page to determine whether said primary page or said mirror page are consistent after recovering from a process or system crash.

18. (previously presented) A data consistency maintenance and recovery computer system comprising:

a bus for providing a communication path between components of the computer system;

a central processing unit (CPU) coupled to said bus, said CPU including a first process and a second process that perform a write operation and a read operation;

a database coupled to said bus, said database stores data on a computer readable medium, said data arranged on a primary page and maintained in an associate mirror page that is a copy comprising said data included in said primary page except when one of said first process and said second process perform a write operation, wherein said associated mirror page is written to before said primary page during said write operation, and

a locking system that creates and manages a lock associated with the primary page and the associated mirror page to determine whether a write operation or a read operation should be permitted to occur, wherein said lock is the lowest order bit of a write counter value.

19. (original) The data consistency maintenance and recovery computer system of claim 18 wherein said lock is locked and unlocked by incrementing said write counter value.

20. (previously presented) The data consistency and recovery computer system of claim 15, wherein said first process and said second process lock said associated mirror page and said primary page when beginning a write operation and unlock said associated mirror page and said primary page when finishing a write operation.

21. (cancelled)

22. (cancelled)

23. (cancelled)

24. (cancelled)

25. (cancelled)